

AMENDMENT TO THE CLAIMS

1. (currently amended) A cover for temperature regulation of an electrical energy storage cell, the cover comprising:

 a first layer of thermally conductive material that is shaped to conform to a cylindrical portion of an outer surface of the electrical energy storage cell, the first layer terminating at first layer ends that are on the cylindrical portion of the outer surface of the electrical energy storage cell, and the first layer having a first thickness and a first value of thermal conductivity; and

 a second layer of thermally insulating material that is shaped to cover an outer surface of the first layer and that extends beyond the outer surface to cover the first layer ends, the second layer having a second thickness and a second value of thermal conductivity; and an outer surface temperature that is lower than a temperature that can cause combustion in a combustible atmosphere, the second layer completely covering the first layer to prevent contact between the combustible atmosphere and the first layer

the first and second thicknesses and the first and second values of thermal conductivity conforming the cover to a combustible atmosphere temperature classification that specifies an outer surface temperature during a short circuit of the electrical energy storage cell.

2. (previously presented) The cover of Claim 1 wherein the electrical energy storage cell produces heat at a hot spot during the short circuit and the first layer of material spreads flow of the heat over a portion of the outer surface of the first layer that is larger than the hot spot and the second layer of material retards flow of the heat to an outer surface of the second layer.

3. (currently amended) The cover of Claim 1 wherein the temperature of the outer surface of the second layer has a measured maximum temperature of 130 degrees centigrade or less during a the short circuit condition.

4. (original) The cover of Claim 1 wherein the first layer of material comprises aluminum.
5. (original) The cover of Claim 1 wherein the first layer of material comprises copper.
6. (original) The cover of Claim 1 wherein the second layer of material comprises heat-shrink tubing.
7. (original) The cover of Claim 1 wherein the second layer of material comprises elastic material.
8. (previously presented) The cover of Claim 1 wherein the first layer comprises two thermally conductive half-shells that each cover one side of a round surface of the energy storage cell.
9. (currently amended) A battery for use in a combustible atmosphere, comprising:
a plurality of electrical energy storage cells that comprise at least one hot spot during a short circuit, each cell being covered by a first layer of thermally conductive material that has a first thickness and a first value of thermal conductivity and that is shaped to conform to a cylindrical portion of an outer surface of the electrical energy storage cell, the first layer terminating at first layer ends that are on the cylindrical portion of the outer surface of the electrical energy storage cell, the first layer being completely covered by a second layer of thermally insulating material, the second layer preventing contact between the combustible gas and the first layer, and the second layer being shaped to conform to an outer surface of the first layer, the second layer having a second thickness and a second value of thermal conductivity, and the first and second thicknesses and the first and second values of thermal conductivity conform the battery to a combustible atmosphere temperature classification that specifies an outer surface temperature during a

short circuit of the electrical energy storage cell an outer surface temperature that is lower than a temperature which can cause combustion in the combustible atmosphere;

electrical connection leads;

a protective device including a fusible link; and

electrical interconnections that interconnect the plurality of electrical energy storage cells in a series circuit with the protective device ~~and the electrical connection leads.~~

10. (original) The battery of Claim 9 further comprising: a plastic resin shell shaped to receive the plurality of covered cells and the protective device.

11. (previously presented) The battery of Claim 10 wherein the plastic resin shell includes plastic resin separation bars positioned between the cells and the electrical interconnections to reduce shorting.

12. (currently amended) A process of covering an electrical energy storage cell, comprising:

providing an electrical energy storage cell that comprises a hot spot during a short circuit; covering a cylindrical portion of an outer surface of the electrical energy storage cell with a first layer of thermally conductive material that has a first thickness and a first thermal conductivity and that conforms with the cylindrical portion of the outer surface of the electrical energy storage cell and that conducts heat flow from the hot spot, the first layer terminating at first layer ends on the outer cylindrical portion;

providing a second layer of thermally insulating material with a second thickness and a second thermal conductivity and with an outer surface temperature that is lower than a temperature which can cause combustion in a combustible atmosphere;

completely covering the first layer with the second layer to prevent contact between the combustible atmosphere and the first layer; and

shaping the second layer to conform to an outer surface of the first layer of material; and
selecting the first and second thicknesses and the first and second values of thermal
conductivity to conform the cover to a combustible atmosphere temperature
classification that specifies an outer surface temperature during a short circuit of
the electrical energy storage cell.

13. (original) The process of Claim 12 wherein the first layer of material is aluminum.
14. (original) The process of Claim 12 wherein the first layer of material is copper.
15. (original) The process of Claim 12 wherein the second layer of material is heat-shrink tubing.
16. (previously presented) The process of Claim 12 further comprising forming the first layer of material as two thermally conductive half-shell shapes that cover a curved surface of the energy storage cell.
17. (previously presented) The cover of Claim 1 wherein the short circuit is external to the electrical energy storage cell.
18. (previously presented) The battery of Claim 9 wherein the short circuit is external to the battery.
19. (previously presented) The process of claim 12 and the short circuit occurring external to the electrical energy storage cell.
20. (new) A battery, comprising:
a plurality of electrical energy storage cells, each cell being covered by a first layer of thermally conductive material that is shaped to conform to a cylindrical portion of

an outer surface of the electrical energy storage cell, the first layer terminating at first layer ends that are on the cylindrical portion of the outer surface of the electrical energy storage cell, the first layer being completely covered by a second layer of thermally insulating material, and the second layer being shaped to conform to an outer surface of the first layer;

a protective device including a fusible link;

electrical interconnections that interconnect the plurality of electrical energy storage cells in a circuit with the protective device;

a generally rectangular plastic resin shell having a bottom shell portion that is shaped to provide mechanical support to the plurality of cells arranged side by side in the bottom shell portion,

the plastic resin shell including separation bars positioned between the electrical interconnections and cell end portions of the cells.

21. (new) The battery of Claim 20 and further comprising electrical connection leads connected in a series circuit with the cells and the protective device.
22. (new) The battery of Claim 20 and further comprising potting compound disposed around the protective device.
23. (new) The battery of Claim 22 wherein the potting compound secures the protective device.